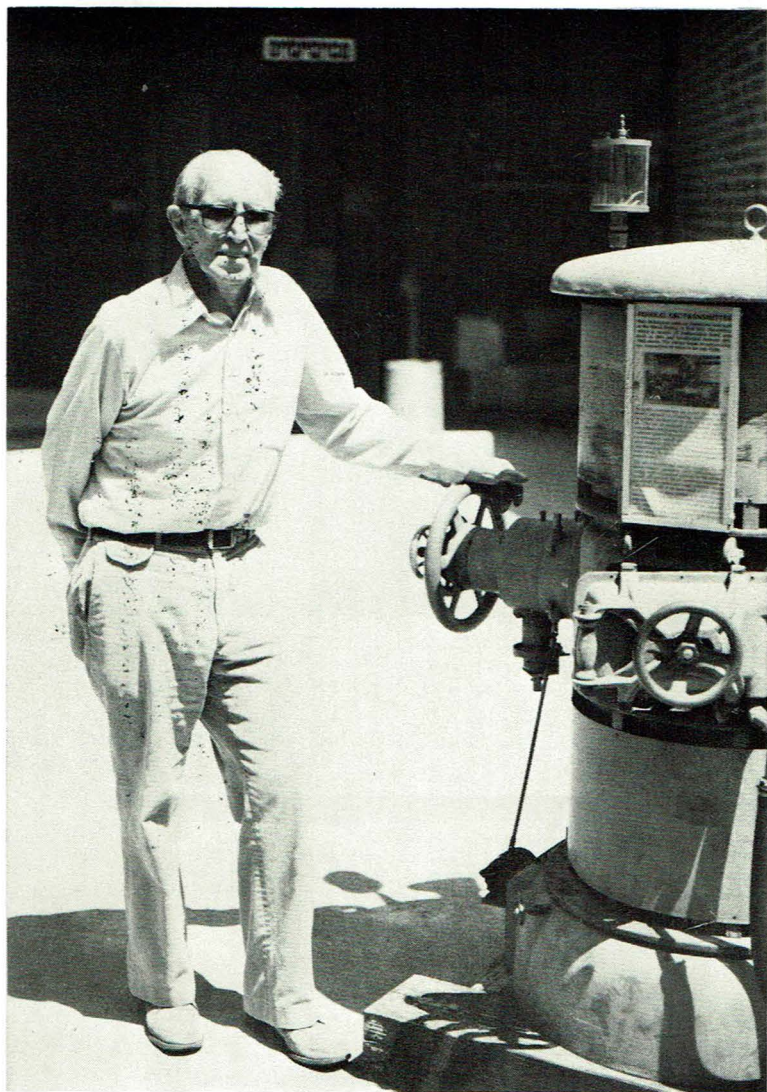


# CHRS

CALIFORNIA HISTORICAL RADIO SOCIETY



vol. 9 no. 6

june 85

# CHRS

## Dave Brodie

It is with deep regret we report the passing of Dave Brodie, W6PGQ.

Dave was one of the founders of CHRS. Throughout the years, he continued to be one of our more active members, holding various positions including Vice-President, Secretary, Publications Editor, and Contributing Editor.

A ham since 1955, Dave also belonged to the AWA, and was a longtime member of the British Vintage Wireless Society.

Dave was the Spotlight Collector in the October 1978 issue of the CHRS Journal. A man of gentle humor and great dedication, he will always have a spotlight in our hearts.

- GH



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Photography: George Durfey, Gary  
Halverson and Bill  
Wakefield

The California Historical Radio Society is a non-profit corporation chartered in the state of California, and was formed to promote the restoration and preservation of early radio and radio broadcasting.

Our goal is to provide the opportunity to exchange ideas and information on the history of radio, particularly in the West, with emphasis in areas such as collecting, literature, programs, and restoration of early equipment.

Regular swap meets are scheduled at least four times a year.

The Journal of the California Historical Radio Society is published quarterly and is furnished free to members.

# THE PRESIDENTS COLUMN

## OOPS

A tragic and unforgiveable error occurred in about 40 of the Newsletters sent out recently. The annual dues was stated as \$15.00/year, however, the correct amount is \$10.00. Hopefully, all of you received a refund, but if not, please write. Sorry for the inconvenience.

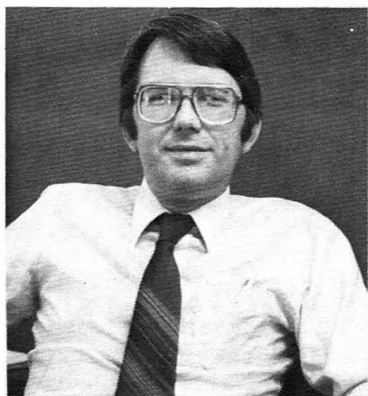
While on the subject of dues, it unfortunately is being raised to \$12.00/year starting August 1st. Renew/join CHRS now if you haven't already done so and save.

## Your New Club

A goal is being defined (and mandated by some of you!) to create a new CHRS. Hence your Board and Officers need to know what the membership wants. A survey form will be found in this journal. We ask that you 1) fill it out and mail it in; or 2) phone one of us and voice your views. You can get what you want is you help guide your club. Remember, if you don't reply, your officers won't know how to steer.

The CHRS bumper stickers are now available. Each renewal gets one free. Additional are \$1.00 each. Can you think of other ways to promote your club? Let us hear from you.

Our June 1st meet had 31 sellers and a nice turn out of contest entries. Many nice photos were taken by George Durfey, some of which are reproduced in this issue. Thanks also to Doug Martin for helping set up the contest tables and to Russ Turner for organizing the entries and keeping a record of them. And also to Norm Berge for obtaining the award ribbons. Yours truly set up a CHRS table where memberships could be renewed and bumper stickers, prior journals, etc, could be acquired.



We had a very nice poolside lunch after the activities, however, only about a dozen people showed up. Do you folks want social get-togethers?

As you may have detected, there isn't as much hype in this column as was in the Newsletter. After scanning over the journals of other clubs, it suggests that many of them are quite advanced with regards to tracing the origins of the early scientists, publishers, manufacturers, broadcasters, entertainers, etc, which made "wireless" the taken-for-granted thing it is today. I believe that we have members with the same interest and desire to know more about all aspects of wireless communication.

That is really what makes this a hobby.

Sure, there will always be room for people who are just collectors and don't really know much about the stuff they have and seem to be in it more for stating how many sets they have, and in some cases with little discrimination for what they collect. And others who seem pre-occupied with financial gain and what their collection is worth. That is not sophisticated collecting, nor does it contribute much

toward our hobby. We should encourage those that give to the hobby instead of taking from. Who knows, maybe a few more historians will surface and add to our knowledge of those early pioneers, manufacturers, circuit developments and components. And let's not forget early authors, without whose efforts the state-of-the-art happenings of the time would not have been disseminated.

This poll is an opportunity to guide CHRS. If the majority want to just be private collectors and have little social contact with others, (except at swap meets to add more to your stash of stuff), we have no problem with that and will guide the club accordingly. Or if you want drop-ins of the sort we had last winter which included slide shows and discussions about this hobby, technical and historical articles in the Journal and the like, we will give you that. So, please let us know what you want. And if you want to contribute directly to CHRS, there is a Treasurers position open as well as two seats on the Board. Let me know if you are interested.

---

Does anyone know the history behind Lewis and Kaufman, Inc., of Los Gatos CA? Any connection to Heintz & Kaufman Ltd. of San Francisco? If you can contribute any information about early vacuum tube manufacturers in the Bay Area, your contribution may be used in an upcoming feature article. Contact your Journal editor at the address listed in the front of the journal.

#### August Swap Meet

The next CHRS Swap Meet is scheduled for Saturday, August 31 at Foothill College.

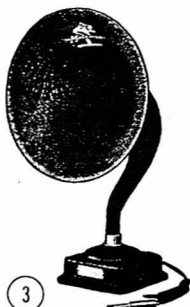
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# EDITORIAL

"Everyone I know is dying".

by Gary Halverson

At a recent CHRS board meeting during a brainstorming session to identify possible guest speakers for the June meet, George Durfey lamented "Everyone I know is dying". We all felt a moment of concern for George's profound awareness of mortality, then continued undaunted by the remark.

It wasn't until a few days later that it really hit me.

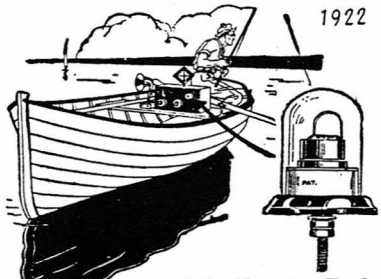
As collectors, we often get really excited about a good "find" -- an addition to the shelves that preserves a statement about the technology of the years gone by. As historians we see Radio as a social phenomenon. It was a technology of social transformation. A technology so powerful, it profoundly changed the industrialized nations of the world by catapulting them into a new era where the public and the individual could instantly span time and distance.

But what about the untold statements of experience confined within individual lifetimes that can't be preserved on shelves in museums or private collections? The stories of personal experiences in history during the moments of its making.

I have a great fear that too many of the truly remarkable "finds" will pass right under our noses, and we won't know it until it's too late. And when these great "finds" are gone forever, it won't be because we were in the wrong place at the wrong time, or couldn't afford the price: it will be because we didn't take the time to ask.

In this issue, we introduce the first of a series of feature interviews with some very special individuals sharing their experiences in the early days of radio.

I hope that these interviews will become a regular feature in the journal, and that they enrich our personal experiences as collectors by sensitizing us to the friends and acquaintances whose personal experiences represent a depth of history the artifacts on our shelves can only faintly echo.

1922

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# CHRS Interview: Len Lansdowne

Currently the curator of the Foothill Electronics museum, Len Lansdowne has been in the electronics industry for the past 67 years. A pioneer in West coast amateur radio, Len was one of the first hams to do experimental work on 5 meters (W6ZZBK) and the first W6 to work Spain (1931).

For the past four years, Len has been the Curator of the Foothill Electronics Museum, operated by the Perham Foundation. During this interview, which took place at the Museum, Len was constantly juggling three or four things at the same time. From answering the phone, conducting tours, helping find the vacuum cleaner, accepting artifact donations, it was quite apparent Len is a high energy guy.

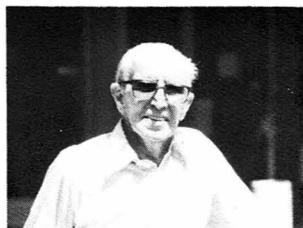
But where Len really turns on is out in front of a group of visitors. I watched in utter amazement as he held a mob of 45 kids mesmerized with his stories and explanations for over a solid hour.

On my personal tour around the museum with Len, I found there was a story behind every just about anything I asked about. Len gives a special quality of depth to the exhibits that make a visit to the Foothill Electronics Museum truly something special.

On each of my visits, Len beamed with well-deserved pride as he showed me letters of thanks and appreciation he received daily. From a fat envelope containing at least two dozen letters and drawings about their visit by a local 4th grade class, to a column a real estate sales lady did in her newsletter about her experience at the museum, they all said the same thing: Thanks for making our visit a really unique experience through your very special personal "guided tour".

CHRS is proud to share this interview with this special man who makes sharing himself with others a daily goal.

- GH



**CHRS:** Tell us a little about yourself.

**Len:** Well, I was born in 1909 in Port Chester New York. My father worked for the Atlantic and Pacific Tea Company. Not long after the War, he was assigned to a new company that A & P bought (which later became Safeway). We moved to California in 1925. I graduated from South Pasadena High School in 1928.

**CHRS:** When did you first get interested in radio?

**Len:** It was when I was nine years old. The grammar school I went to also had a high school upstairs. Every once in a while, I'd hear this dit-dah sound coming from upstairs. When I went to see where it was coming from, I found the Chemistry teacher had a ham rig. He was using a straight spark gap, a Ford type spark coil and a crystal receiver. For a power supply, he had 180 Mason jars with strips of copper and aluminum in series as a 90 volt battery. The antenna was a 100 foot length of bare copper wire.

He said he'd help me make a crystal set. He told me I'd need to get about 100 feet of bare copper wire for my antenna. I couldn't afford to buy it, so I got the school

janitor to give me the wire from an old bell. It was double cloth covered, and they said it wouldn't work, but it worked perfect.

My mother was pretty angry with me when I cut up her shelving to make my crystal set. But when I let her listen to Souza on KDKA, all was forgiven.

**CHRS:** How did you first get interested in amateur radio?

**Len:** In about 1930 I wanted to get my license. About 4 or 5 doors down was a crippled ham who said he'd teach me the code for \$2.00 so he could buy a bigger tube to work his friend in Hawaii (money was scarce then). I worked for a lady who sewed furs. I'd cut her grass and mow her lawn, so I gave him the money I made.

**CHRS:** When did you get your ham license?

**Len:** December 10, 1931. W6FKF.

**CHRS:** Describe your first station.

**Len:** Well, it was in an old forty foot high redwood water tank house. The shack was just under the tank. I fixed it up and my mother wallpapered it so it was presentable when we brought our girlfriends up. I remember I had to run in heavier wiring. I think those were some of the best times in my life.

My receiver was a Pilot Super Wasp wound for 40 and 80. My transmitter was a 210 crystal oscillator, a 210 doubler, and a 211D final running 50 watts. And a Zepp antenna.

**CHRS:** Why do say those were some of the best times of your life?

**Len:** I had a Model T with Rajo head for overhead valves, a Rucksteel axle, and a Wheeler muffler.

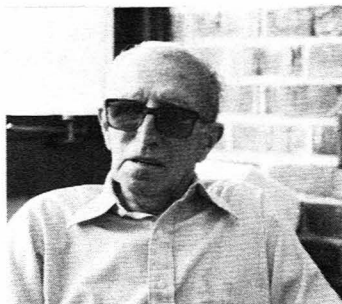
**CHRS:** One of the original Hot-rod-ders?

**Len:** Yeah, I guess so. We wore Plus-4s pants (they came just before bellbottoms). I had my call letters on the rear tire cover of the Model T. Other hams would drive by and send CW on their horns.

I also had a glider I built with two other friends. It was made out of balsa wood, canvas and wire. When it was done, we went out into a field to test it. We drew straws and I got the short one, so I was the pilot. We tied a rope to it and the Model T to pull it. When it got up above the car, the shadow from it scared my friend who was driving, so he slammed on the brakes. The glider went straight down. I broke my leg. My father was so mad, he got an axe and chopped it up.

**CHRS:** Do you remember your first contact?

**Len:** Oh god, that was a long time ago. I remember my first J (Japan) contact. J1DO. It was at 1:55 AM. We're the same age and still correspond. We've also visited each other several times since then.



**CHRS:** What kind of work did you do then?

**Len:** I worked at a printing plant until I went into the Signal Corps in 1942.

After retiring from the Signal Corps in 1966, my wife and I travelled. We visited Germany, Denmark, Australia, New Zealand, Japan.

**CHRS:** What do you think you like the most about being a ham?

**Len:** The people. In 52 years of hamming, I've been visited by hams around the world from an English Nobelman to an Indonesian fellow who I could only communicate with using Q signals.

**CHRS:** How did you become Curator of the museum?

**Len:** One day in 1980, the guy who was the curator then asked me if I'd take over for him while he took a two-week vacation to visit friends back east. He didn't come back.

**CHRS:** Tell us about the Museum.

**Len:** The Museum was founded in 1969 and opened in 1971. Foothill College was subsidizing our operating expenses then and we had eight employees. When Proposition 13 went into effect and the school had to cut back, the Perham Foundation board took over, and since then we operate strictly on donations. The majority of the time I'm here is voluntary.

A number of our exhibits represent only 1 or 2 of a kind left in the world. For example, a Nobaflex 3, one of the first AC receivers that used tubes, but had a crystal detector. Another example is a Bush and Lane receiver. I've never seen or heard of another one anywhere. There's also a magnetic detector from Denmark that's one of a kind.

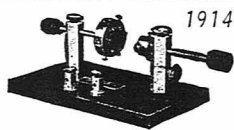
**CHRS:** What do you like the best about being the Curator of one of the best Electronics museums in the West?

**Len:** The people who come to visit us. Many are amazed at the history preserved here. It's the thanks and genuine appreciation that make it all worth while.



**Editor's Note:** You can visit Len at the Foothill Electronics Museum Thursdays and Fridays from 9:00 AM to 4:30 PM, except 12:00 to 1:00 PM. The Museum is also open Sundays from 1:00 to 4:30 PM. Special tours can be arranged at other times by calling:

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# ONE MAN'S HOBBY

by Bob Malin

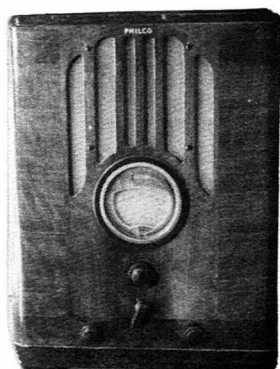
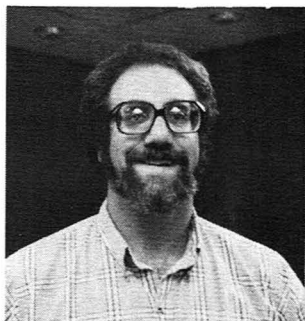
If collector's fever has hit you like it hit me, then my radio biography will interest you.

It all started with a glimpse of a Stromberg-Carlson console radio. The radio was in original condition and working. It was a miracle that something that old was still operating. It cost me \$25. I still have that set because it reminds me of what this hobby is all about -- miracles.

I started buying everything that I saw, mostly basket cases, but also some oldies-but-goodies. One lucky early find was a 1924 Northrome IV battery set complete with OIA's and a horn speaker. I kept it six years until I bought a power supply to hear it work, which it did -- wonderfully.

After accumulating thirty or so sets I started weeding out junkers and trading the better sets for more sophisticated ones like a Philco model 90B. A couple of old T.V.'s and a juke box gave me a rounded-out collection. A few years ago I joined CHRS and a couple of members came over to see my collection. After they left I felt like throwing out most of my sets and collecting buttons instead. But I learned something very important in any type of collecting. Be selective. My new fellow collectors showed me the way and gave me some leads, some good buys, and lots of help in repairs and background information.

I now have things like motor-drives, chairside, three window consoles, celluloid sets, Tune-O-Matics, and wireless remote sets. I hope that more members invite and help newcomers like I was. It's a great hobby but don't overload your collection with treasures; leave them for me!





## Our Oldtime Radio Heroes

By Jerry Perchesky, Radio Historian

How many of you recall the hoofbeats of the white horse Silver? Or the wonderful adventure series from the pen of Carlton E. Morse, *I LOVE A MYSTERY*? The creaking door of *INNER SANCTUM*? The spine-tingling episodes of *SUSPENSE*, which featured Agnes Moorehead, an actress of marvelous stature, who performed, "SORRY WRONG NUMBER", not twice or three times, but on seven different occasions? Well, we are not alone.

The thousand or so members of *PACIFIC PIONEER BROADCASTERS* in Hollywood relive those memories every few months in *ROASTS* held at Sportsman's Lodge in Studio City. The organization, now over ten years old, is made up of every facet of the radio industry. Its members must have 20 years in the industry to qualify for membership. They also have a memorabilia room, located downstairs in the Home Savings building at Sunset & Vine (ironically enough, the site of the former NBC Studios). At the last memorabilia meeting, the guest speaker was Jackie Cooper (who had been roasted two months before).

I have the great fortune to be able to attend most of those functions, which promotes radio history in its greatest heyday. I have had lengthy conversations with many of radio's greats, and befriended most of them, since I have provided them with many hours of their old radio appearances. Jim Jordan (Fibber McGee), now in his 88th year, attends all of the affairs, and is on the Board of Directors. I spoke to Jim at the last meeting, where Neil Reagan, Ronnie's brother, was being roasted. He is a lovely person, and can recall some of the most amusing stories of the industries ever told.

I also spoke to the aforementioned, Carlton E. Morse, who originated and wrote not only *I LOVE A MYST-*

*ERY*, but also *ONE MAN'S FAMILY*, one of the longest-running shows in radio history. It aired on Friday, April 29th, 1932, through May 8, 1959. Some of the names appearing on the show is a sampling of some of the best in the business: Wally Maher; Barabara Jo Allen; Mary Jane Croft; Sam Edwards; Jill Oppenheim (later Jill St. John); Jeanette Nolan; Marvin Miller; Ken Carpenter; and Janet Waldo to name a few. As for *I LOVE A MYSTERY*, one of its stars and main characters was Tony Randall.

Some of those I spoke to at the last luncheon were: Penny (Blondie) Singleton; Lurene Tuttle; Les Tremayne; Olan Soule; Ralph Edwards, Pat Buttram; Efrem Zimbalist, Jr. (who informed me he was once on *RENFREW OF THE MOUNTIES*); Connie Tower (now on soaps, and the wife of John Gavin, now our Ambassador to Mexico); and around the room the many familiar faces of actors, formally of radio, who are now evident on our screens daily in various TV commercials.

My point is: *RADIO IS NOT DEAD!* These professional, some of whom have been in the business some 40 to 50 years, are still active, if not in commercials, then doing "voice-overs" for Saturday morning cartoon characters, or writing, or producing. Many of them are still acting in TV series, or character roles in motion pictures. All of them are happy to engage you in conversation about the "good old days of radio," and they all have fabulous stories to tell.

The next luncheon is scheduled for the third Friday in May, and I will certainly be there. I guess Fibber McGee (Jim Jordan) summed it up at the mike one day, when he said, "We all have one great thing in common — we're OLD! Perhaps. But the talent and enthusiasm is still there. God Bless our pioneers of broadcasting, and keep up the good work."

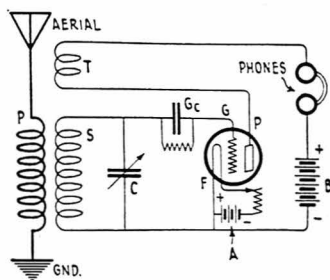
## THE REGENERATIVE RECEIVER

by Herb Brams

Regeneration occurs when part of a signal amplified by a tube is fed back to the input so as to increase the apparent strength of the incoming signal. This principle of "regenerating" the input signal is used to greatly increase the sensitivity of a receiver, or to provide a greater output. Besides increasing amplification, regeneration also increases the selectivity of the circuit, increasing its ability to reject unwanted signals close to the desired signal.

Discovery of the principle of regeneration is generally credited to Lee deForest and E.H. Armstrong in 1912 - 1913. Regenerative receivers were most common in the period from WW I until the early 1920's. They had the advantages of being simple, sensitive, selective, capable of receiving different types of signals, and inexpensive to produce.

A typical regenerative receiver circuit is illustrated below:



The incoming signal at the antenna is transferred to the tuning circuit L, C by the radio-frequency transformer RFT. The signal is then fed into a one-tube circuit that acts as a grid-leak detector (CHRS Journal, May-June 1984). A "tickler coil", T, connected to the plate of the tube is placed near the antenna coil. The incoming signal amplified by the tube flows through the tickler coil inducing

into the antenna coil a current that is in step with the incoming signal. The resulting output signal is thus greater than if no regeneration had been applied.

To reinforce the incoming signal, the amplified signal must be fed back in phase with the incoming signal for regeneration to occur (positive feedback). If the amplified signal is fed back to oppose the incoming signal (negative or degenerative feedback), amplification would be decreased. In the circuit above, the leads of the tickler coil may have to be reversed to obtain regenerative feedback.

There is, however, a limit to how much regeneration may be applied. If regeneration is increased too much, the circuit breaks into oscillation, interfering with the signal being received. The point of maximum regeneration occurs just before the circuit breaks into oscillation. This point is very sensitive to factors such as the circuit used, component layout, strength of the incoming signal, and the operator's body capacity (closeness to the receiver). For this reason, regeneration must be controllable. Regeneration may be controlled in a variety of ways. In the circuit above, it is controlled by moving the tickler coil closer or farther from the antenna coil. Alternately, the filament or plate voltage may be varied to change its amplification. Other methods are also possible.

Besides requiring careful adjustment to avoid oscillation, regenerative receivers have other disadvantages. Regeneration must be readjusted for each signal tuned in. Strong signals can overload the regenerative detector. The linearity of amplification is also poor, causing distortion of voice signals. The selectivity may be so great that the sidebands of the signals are cut resulting in poor audio quality. If the receiver breaks into oscillation, it acts as

a miniature transmitter, radiating a signal that may cause interference in nearby receivers. However, with careful adjustment, the regenerative receiver is capable of good performance.

To receive a signal, regeneration is first turned down, the signal is tuned in, then regeneration is increased until the signal is heard clearly. Signals may also be received when the circuit is oscillating. In this mode, the receiver produces a signal whose frequency is determined by the tuned circuit in the oscillating stage. If the oscillation frequency is within a few kilocycles of an incoming signal, it heterodynes with the incoming signal, producing an audible beat tone.

To detect weak signals, regeneration is increased until oscillation occurs. The receiver is then tuned slowly across the band. The presence of a signal is indicated by a whistling tone caused by the heterodyning. Regeneration is then decreased until oscillation stops and the desired signal is clear.

To detect continuous-wave (CW) signals, regeneration is increased until oscillation occurs. The receiver is then detuned slightly from the incoming signal so that the oscillation signal heterodynes with the incoming signal to produce an audible tone. The dots and dashes of the code signal are heard as tones. This is essentially a form of Fessenden's method of heterodyne detection with one tube acting simultaneously as oscillator, converter, and detector (CHRS Journal, Jan-Mar 1985). This method of detection is known as autodyne reception. Single sideband signals (SSB) may be detected in a similar fashion by tuning the receiver carefully to supply the missing carrier frequency.

Other methods of obtaining regeneration include feedback through the tube itself. In the case of

triodes, interelectrode capacitance between the plate and grid structures can provide the feedback. If an inductor is placed in series with the plate, its impedance forces the signal on the plate to be coupled to the grid through this interelectrode capacitance. In many early receivers, this caused unwanted oscillation with whistling, squealing, howling and other forms of interference. In the absence of oscillation, such regeneration effects may have accounted for the wide variations in early receiver performance. With the invention of the screen-grid tube in the late 1920's, in which a metal plate between the signal grid and plate shielded these elements from each other, these feedback problems were greatly reduced.

By the mid-1920's the regenerative receiver had been supplanted by other types (TRF, Neutrodyne, and superheterodynes), but even until the mid-1930's regeneration was occasionally used in inexpensive sets to increase sensitivity and selectivity. Because of their simplicity, good performance, and low cost, regenerative receivers are popular sets for amateur radio enthusiasts and beginners.

#### References:

- The Radio Amateur's Handbook, ARRL, 33rd ed., 1956
- CHRS Journal, May-June, 1984; Jan-Mar, 1985
- Fundamentals of Radio, F.E. Terman, 1st ed., 1938
- Radio Physics Course, A.A. Ghirardi, 2nd ed., 1933
- Radio Encyclopedia, S. Gernsback, 1927
- Radio Age, Nov, Dec 1984; Jan, Feb, Mar, 1985

## THE REGENERATIVE DETECTOR

by Ed Fistor

What is the only detector circuit that will demodulate more different kinds of signals than any other type? Believe it or not, it's the old standby, the regenerative detector. Let's take a look.

Start out with a plain old CW carrier. With the detector non-oscillating, only the transmitter tube noise is heard. Turn up the regeneration and the beat note between the oscillating detector and the carrier provides a melodious tone which makes Morse code easy to copy. The gain of the detector is tremendous, up into the thousands, providing fantastic sensitivity from such a simple circuit.

Now let's look at AM. With the detector non-oscillating, signals will be heard, but weakly. Turn up the regeneration, that is, increase the gain of the detector by providing feedback and sensitivity will increase greatly. At the point where the circuit is just trying to oscillate, the circuit is most sensitive. Circuit Q will be so high that the sidebands are attenuated, providing very high sensitivity and selectivity. When the detector breaks into oscillation, the beat note with the carrier will be loudly present. If the circuit is sufficiently stable, the detector may be tuned to zero beat, the whistle disappears, and audio will be quite good. With oscillation, sensitivity is increased even further. I've chased many a far-away shortwave broadcast with one hand on the tuning knob and the other on the regeneration control, squeezing the last drop of sensitivity out of the receiver.

Single sideband signals are easy. The oscillating detector supplies the missing carrier and the rest of the circuit thinks it is receiving an AM signal. It takes good band-spread tuning to keep the carrier

properly located, else the signal changes pitch and becomes monkey chatter. By shifting the frequency ever so slightly, either USB or LSB may be copied.

FM can be received by using slope detection. The resonant circuit attenuation curve and a discriminator transfer curve are quite similar. Tune the detector to one side or the other of the carrier and FM demodulation occurs. The fidelity leaves something to be desired, but it works. Remember the 2-tube Fremodyne receiver in the early days of FM?

Some of the exotic pulse, phase, TV, or whatever modulation schemes may require additional processing to extract the intelligence, but the regenerative detector will receive them all.

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**ANOTHER**

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"Several times I have intended to write you or call you when visiting Newark. I wanted to let you know of the fine service we have been getting from the Mozart Baby Grand. The clearness of music, voice and other entertainment seems so different from other loud speakers that we have experienced. We also use the ———— Talkers, but we stick to the Baby Grand for Accuracy."  
(Signed) R. T. DONOVAN  
5501 5th St., N. W., Washington, D. C.

1925

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|                                                                                                                                               |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Baby Grand Reproducer, with gold plated unit, black and gold crackle or extra heavy coated all black satin finish (approx. 12 inch bell)..... | \$12.00 |
| Baby Grand Reproducer, with metal plated unit, black satin finish (approx. 11 inch bell).....                                                 | 10.00   |
| Electro-magnetic unit (fits almost any horn or phonograph) with cord, nickel plated.....                                                      | 4.00    |
| Gold plated.....                                                                                                                              | 5.00    |
| Mozart Special Headset.....                                                                                                                   | 5.00    |

No extra batteries required.

Orders—If your dealer cannot supply, order direct.

Transportation—Single shipments, strictly F.O.B., factory. Free on two or more orders for each item.

Guarantee—One year from date of purchase or money back in ten days.

**The MOZART GRAND CO.**  
*Manufacturers of Fine Instruments*  
NEWARK, N. J. U. S. A.

## CONSTRUCTION PROJECT:

### One Tube Regenerative Receiver

by Floyd Lyons

In the early days of radio, many radio enthusiasts built their own receivers from parts and devoted considerable time in experimentation to improve these sets. Today, a lot of pleasure can be had by building an old set, seeing how well it performs, and experimenting to see if one can improve its performance. For such a project, I built a one-tube regenerative receiver. This is a simple project but is a good performer. I used original parts to make it authentic.

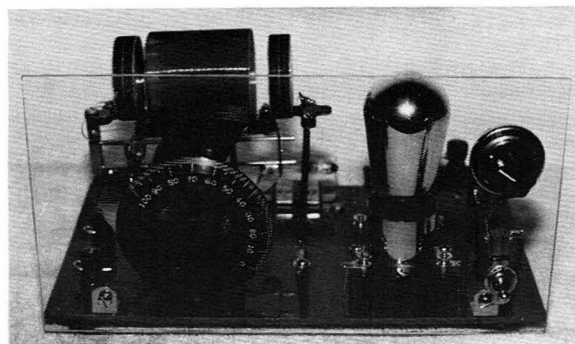
#### Parts List

- Hammarlund Auto-Couple antenna coil
- Regenerative winding
- Hammarlund 17-plate tuning condenser (.00035 mfd)
- 01A tube and socket
- Rheostat, 10 or 15 ohm
- Off-On toggle switch
- Grid leak, 2 megohm, and holder
- Grid condenser (.00025 mfd)
- Bypass condenser (.001 or .002 mfd)

- Headphones, high impedance
- Binding posts (8) for phones, batteries, etc.
- Micarta baseboard, 10" X 6"
- Front panel (clear plexiglass), 10" X 5 3/8" X 1/8"
- Batteries, 6v A, and 45v B.

For the antenna coil, I used the famous Hammarlund Auto-Couple coil. On this coil, coupling from primary to secondary is adjustable from loose to tight coupling. This is accomplished by the rotation of a cam on the rear part of the tuning shaft. Tight coupling helps bring in weaker stations; stronger stations benefit from loose coupling. The primary of the antenna coil is tapped so that one can experiment with different antenna connections. A separate coil was added to the antenna coil for regeneration. This coil was the antenna-ground primary winding from another Hammarlund Auto-Couple coil. Regeneration is controlled by varying the filament voltage on the tubes. The 10-ohm rheostat gave good control of regeneration.

Various tubes were tried to see how they affected the performance of the set: types 30, 99, 01A, 200-A, and Western Electric types VT-1 and 101-F. All worked well, but 01A tubes gave the best volume and most stable operation.



This one-tube regenerative set is a fine performer. Volume is good, the set is easy to tune, and sensitivity and selectivity are high. I can easily get ten strong stations and a few weaker ones as well. The set performs well even without an antenna, using a ground connection only. Volume may be increased by using a higher B battery voltage, 67 1/2v instead of 45v. Changing the grid-leak resistance and head-phone impedance may also help, especially if different tubes are used.

This is actually the second set like this I have built. The first set was purchased by Toshiaki Kurashima, a Japanese guest, at our Foothill CHRS Swap Meet a few years ago. I felt lost without it, so I decided to build another one. I intend to hang onto this one!

**\$9.50 A Complete \$9.50**  
**LOUD SPEAKER**

A Loud Speaker for thousands of Radio Fans who are looking for a moderate priced speaker with quality.

Heavy metal horn, 21 inches high, bell 11 inches in diameter, complete with special loud speaking unit and 5 ft. cord.

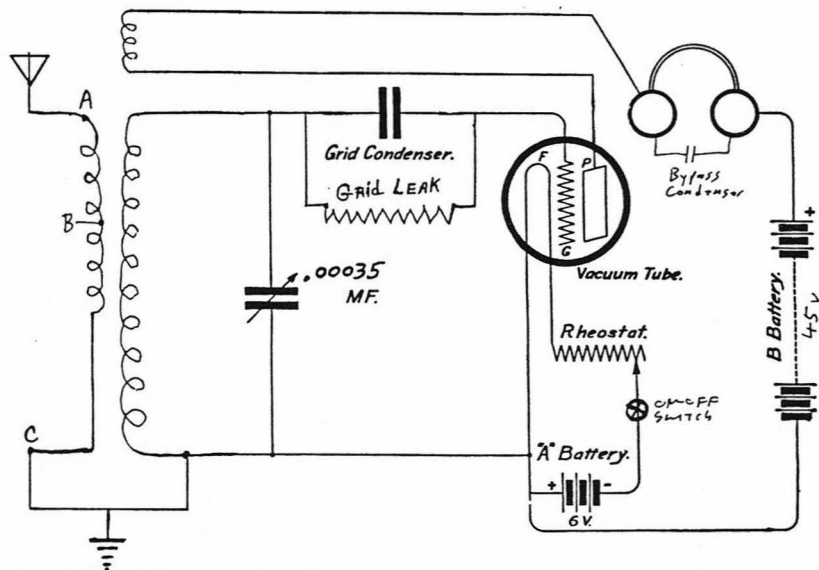
Colors: Plain Black or Brown Satin finish; also special Alligator grain in Black and Green or Black and Yellow.

Price of horn only with phone adapter, without loud speaking unit, \$5.50

Liberal Trade Discounts

**ACKERMAN BROTHERS CO., Inc.**  
301 West 4th St. Dept. "PR" New York, U.S.A.

1923



# IM RADIOACTIVE

## CALIFORNIA HISTORICAL RADIO SOCIETY



The new CHRS bumper sticker is now available. All new members and subscription renewals will receive their message to the world: "IM RADIOACTIVE". If you would like additional bumper stickers, they are available at a modest donation of \$1.00.



# *From the beginning* wireless telegraphy

by Paul J. Bourbin  
and Gary Halverson

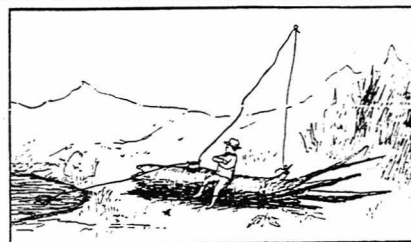
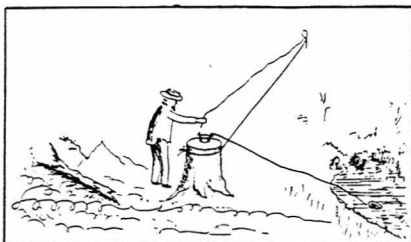
Early wireless telegraphy is usually associated with radio, however, it is not generally known that various forms of "wireless" telegraphy existed before radio. In this three part series, a brief history of wireless transmission from the discovery of the principles to World War One is presented.

In presenting any kind of historical recap of chronological events, it is difficult to identify a single person as the first to discover a principle or concept, since so many parallel discoveries were made in different parts of the world. In this issue, the works of the first American wireless pioneers are reviewed.

The various forms of "wireless" telegraphy that preceeded radio, as it is now known, can be divided into three general catagories: Conduction, Electrostatic, and Induction. This issue covers Conduction, Electrostatic and Electrodynamic Induction, while parts two and three cover Electro-magnetic radiation (radio waves).

Conduction was originally theorized by the Spanish physicist Salva in 1795 and first done in 1838 by Steinheil accidentally with a single telegraph wire using the earth as the return conductor. The first practical use was by Morse in 1842 from Castle Garden in New York City to Govenor's Island. Conduction was used because a ship's anchor destroyed the cable and conduction would prevent reoccurences. The distance covered was about a mile.

In 1865, Dr. Mahlon Loomis demonstrated transmission between two kites. The following account of this historical event is from his diary:



"From the two mountain peaks of the Blue Ridge in Virginia, which are only about two thousand feet above the tidewater, two kites were let up, one from each summit, eighteen or twenty miles apart. These kites had each a small piece of fine copper wire gauze about fifteen inches square attached to their underside and connected also with the wire six hundred feet in length which held the kites when they were up. The day was clear and cool in the month of October, with breeze enough to hold the kites firmly at anchor when they were flown. Good connection was made with the ground by laying in a wet place a coil of wire, one end of which was secured

to the binding post of a galvanometer. The equipments and apparatus at both stations were exactly alike. The time pieces of both parties having been set alike, it was arranged that at precisely such an hour and minute the galvanometer at one station should be attached, to be in circuit with the ground and kite wires. At the opposite station separate and deliberated half-minute connections were made with the kite wire and the instrument. This deflected or moved the needle at the other station with the same vigor and precision as if it had been attached to an ordinary battery. After a lapse of five minutes, as previously arranged, the same performance was repeated with the same results. Then fifteen minutes precisely was allowed to elapse, during which time the instrument at the first station was put in circuit with both wires, while the opposite one was detached from its upper wire, thus reversing the arrangements at each station. At the expiration of fifteen minutes the message or signals, can in at the initial station, a perfect duplicate of those sent from it, as by previous arrangement. And although no transmitting key was made use of nor any sounder to voice the messages, yet they were just as exact and distinct as any that ever traveled over a metallic conductor. A solemn feeling seemed to be impressed upon those who witnessed the little performance as if some grave mystery hovered there around that simple scene. It continued to transmit signals only about three

hours when the circuit suddenly became inoperative by the moving away of the upper electric body. Hence it is that high regions must be sought where disturbing influences cannot invade."

Some folks maintain that Dr. Loomis's system merely demonstrated a phenomenon of nature rather than the transmission of intelligence, and therefore not significant in the history of radio. Although the value of his contribution is argued, it is generally accepted that the term "aerial" was coined by Dr. Loomis.

The first man ever to broadcast the human voice appears to have been Professor Amos Dolbear who exhibited an electrostatic system in April 1882 in London. (He was granted an American patent on this system in 1881). Other accounts indicate his discovery of the principle in 1876 Dolbear at Tufts University, near Boston.

The Dolbear system was based on the electrostatic coupling method. In his apparatus, the power from a battery went through a carbon telephone transmitter to an induction coil attached to an elevated wire. Sound upon the diaphragm of the telephone transmitter caused a current variation in the induction coil and thence to the elevated wire. Reception was through a detector and phone earpiece connected to an elevated wire and ground. This system was suited to voice transmission only as the signal was too weak to operate a telegraph relay. He succeeded in transmissions of up to half a mile.

This system capacitively coupled the signal by using a wire or tin roof as one plate of a capacitor, while another wire formed the opposite plate.

Nathan Stubblefield, an eccentric farmer from Kentucky demonstrated a somewhat similar, but inductively



based wireless voice transmission on his farm in 1885, ten years before Marconi bridged the English Channel using dots and dashes. Stubblefield's system consisted of a large "air core" transformer strung around a series of telephone poles erected around his property. The receiver was a iron ring (the secondary winding) mounted to a telephone receiver.

Murray Kentucky attorney Rainey Wells, recounts a demonstration Stubblefield performed for him in 1892:

"... He had a shack about four feet square near his house from which he took an ordinary telephone receiver, but without wires. Handing me these, he asked me to walk some distance away and listen.

"I had hardly reached my post, which happened to be in an apple orchard, when I heard 'Hello, Rainey' come booming out of the receiver. I jumped a foot and said to myself, 'This fellow is fooling me. He has wires someplace.' So I moved to the side some 20 feet but all the while he kept talking to me. I talked back and he answered me as plainly as you please. His voice sounded much as a human voice sounds over a telephone today, but there were no wires, mind you."

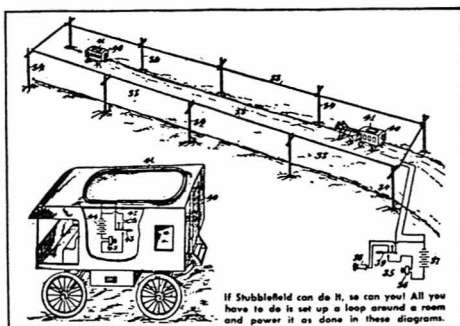
As news of Stubblefield's invention spread, he received offers ranging from \$50,000.00 to half a million dollars, but he refused them all.

In April 1907, Stubblefield applied for a patent, and was awarded it on May 12, 1908. But by this time, the commercial rights to a similar system had been sold to a company that was actively promoting it. Stubblefield returned to Murray bitter and disappointed. For the next 20 years, he succeeded in his desire to be forgotten. He died in March, 1928.

## References:

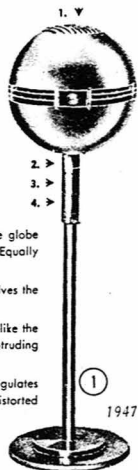
Loomis illustrations and diary quote from Radio Theory and Operating, 1928, by Mary Texanna Loomis.

Rainey Wells quote and illustration from Stubblefield, the first name in broadcasting from 1885, by W.T. Stubblefield Co., Inc.



## ... Revolutionary RADIO SENSATION

Already famous in many parts of the world, the ultra modern Emor Radio is causing a sensation in the United States. Its unusual new design affords simplicity of operation as well as marking a new step in streamlined radio beauty. Patented all over the world, the Emor Radio is made by Artist Craftsmen and is an exquisite addition to any style of interior decoration. Sturdy in construction... superior in quality of materials... this five tube, all wave Super-heterodyne set is outstanding for its clarity of reception and excellence of tone as well as for its appearance.



1. **LOUD-SPEAKER GRID** at the top of the globe provides even distribution of sound waves. Equally clear and distinct in any part of the room.
2. **TUNING CONTROL** in top sleeve. Revolves the globe for reception on all bands.
3. **WAVE LENGTH CONTROL** is in sleeve like the other controls. Easily accessible with no protruding knobs.
4. **VOLUME CONTROL**, also in a sleeve, regulates the reception from a whisper to an undistorted fortissimo.

No table necessary. Stands on the floor, 4 1/2 feet high and is adjustable up to 6 feet.

**EMOR RADIO, LTD.** 400 EAST 118TH STREET  
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Tel. SACramento 2-3374-5-6

## Good Listening

Listeners in the San Francisco Bay area are in for some pleasant listening if they tune in The Prairie Home Companion, Saturdays, 3-5 pm on KCSM (91.1 FM), or KQED 6-8 pm (88.5 FM). This live radio program, originating from "Lake Wobegon", Minnesota, is similar to that old radio classic, Grand Ole Opry, and features good music, gentle humor, home-spun philosophy, and general good feeling all around. The show avoids the low-brow, raucous, cornball approach taken by other types of shows and provides a refreshing two-hour interlude for those who still want to listen to their radio.

- Herb Brams

## Spike Jones

An entertaining and informative book about Spike Jones and his City Slickers, those musical madmen who provided so much outrageous musical entertainment in the 1940's and 1950's, has come to our attention. The book is Spike Jones and His City Slickers; An Illustrated Biography, by Jordan R. Young, publ. by Disharmony Books, a division of Moonstone Press, P.O. Box 142, Beverly Hills, CA 90213, 192 pp. \$14.95 (1984).

The book provides an interesting and detailed account of Spike and members of his band, with plenty of photographs, amusing anecdotes, and reminiscences by friends. Such well-known musical gems as "Der Fuehrer's Face", "Cocktails for Two", "Beetlebaum", and "My Old Flame", are given the loving attention they so richly deserve. An extensive discography is included.

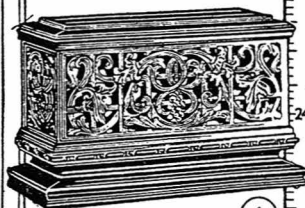
- Herb Brams

## Imagine an air column 48" long

...concealed  
in a cabinet  
only 18" long

RET that is exactly what has been accomplished in the Amplion Patrician. A 48" air-column amplifier is assembled with the world-famous Amplion unit in a mahogany cabinet 18"x12"x9".

That is the reason why this splendid instrument has such a wide range of resonant, natural tone — mellow.



### AMPLION PATRICIAN

AA18....\$50

Hand-carved mahogany grille on all four sides, giving a non-directional reproduction.

#### OTHER AMPLIONS:

Amplion Cone  
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Other models as low as \$12

Write for illustrated literature giving full details of the Amplion line.

The Amplion Corporation  
of America  
Dept. X, 280 Madison Avenue  
New York City

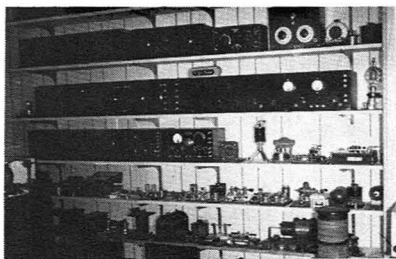
The Amplion Corporation  
of Canada, Ltd.  
Toronto, Ont. 1927

# AMPLION

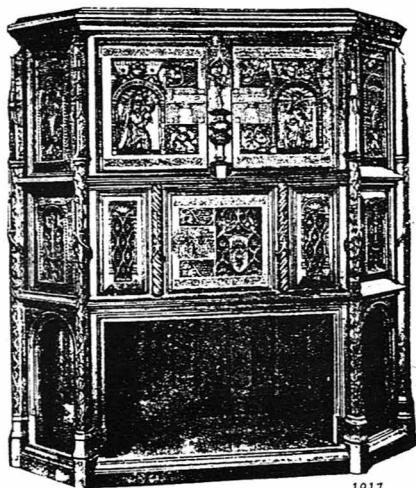
# spotlight collector

Will Jensby, W0EOM

I've been a ham since 1952 and interested in antiques for 20 years but didn't get involved in antique radio until 1974. A gas engine collector in the neighborhood wanted to sell some radios he had acquired at auctions. This was in Nebraska where I lived from 1970 to 1982. Then I discovered the various publications and attended my first swap meet ever in April of 1976 by flying out to the Foothill College meet.



I collected a large number of ordinary sets attending auctions and visiting dealers in the Midwest, and for several years brought a station wagon load of radios to California on my winter vacation from farming. In 1976 I made a significant find by reading the Antique Trader, buying a deForest RJ-6 with 2 spherical Audions from a dealer in South Dakota. This won me a first prize when I attended my first national AWA meet in September of 1976.



1917  
THOMAS A. EDISON, Inc.,  
FRENCH GOTHIC

## Aeriola X Crystal Set

**\$12** Complete

with  
100 ft. aerial wire, 35 ft. ground and lead-in wire, aerial insulators, porcelain tube, lead-in strip, ground clamp, nail-tite knobs, set head phones. (Without accessories, \$6.00.)

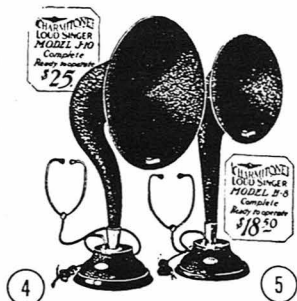
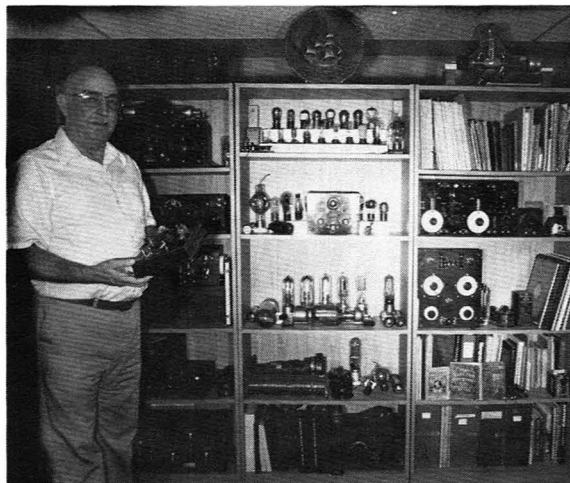
**MONEY BACK GUARANTEE**  
Send for FREE Descriptive Booklet.

CRAIN BROS. RADIO SHOPPE  
2304 Telegraph Avenue : : Oakland, Calif.



My collecting reached a peak in 1978 when I acquired the W4AA (Wayne Nelson) collection through the efforts of a mutual friend. After moving to California in 1982, I slowly reduced the size of my collection although I am still adding to a large library.

I have been almost inactive in tracking down old radios lately, until coming across a Leutz C-7 Special in very nice condition recently in San Jose.



**CHARMITONE**  
LOUD SINGER

1924

*—a superior  
Musical  
Instrument  
for Your Radio!*

**T**HIS Radio Horn is rapidly becoming the favored instrument of discriminating enthusiasts, due to its remarkable musical performance, its beautiful appearance, and its patented mechanical features which assure easier and more satisfactory operation.

### TWO-in-ONE ACTION

Tuning and Amplifying off the same master phone in the base of the horn.

### SUPERSENSITIVE STETHOSCOPE

Eliminates Head Phones and increases the pleasure and satisfaction from your Radio Set.

### NO PLUGGING IN AND OUT OF RADIO SET

Tuning is done with Stethoscope in ears, then one turn on lever in base of horn cuts out Stethoscope and operates the horn. No chance of losing volume when changing from head set to horn; or disturbing dial adjustments and losing station. Same lever also controls volume in Stethoscope and horn. Any number of Stethoscopes may be used for listening without additional drain on the batteries or loss of volume.

### BEAUTIFUL, SPARKLING ONE-PIECE HORN

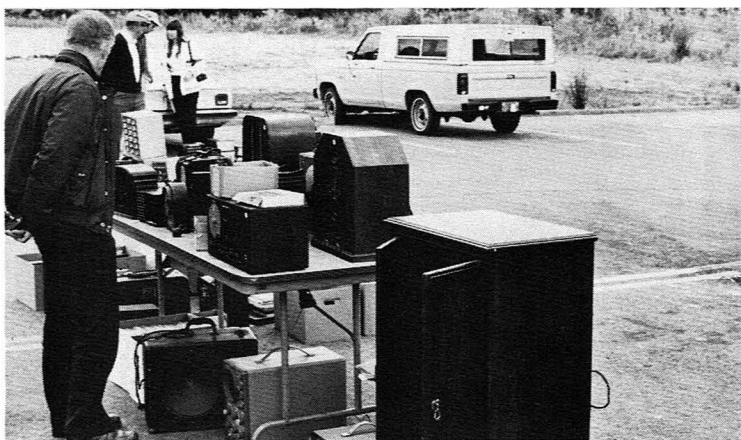
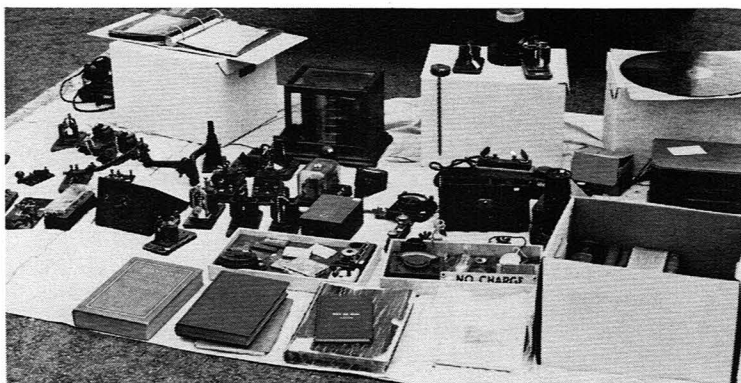
with silver plated metal parts. Best workmanship in every detail; dark gray crystalline finish. Made in two models; see illustration above. Extra Stethoscopes, complete with all fittings, each, \$1.50.

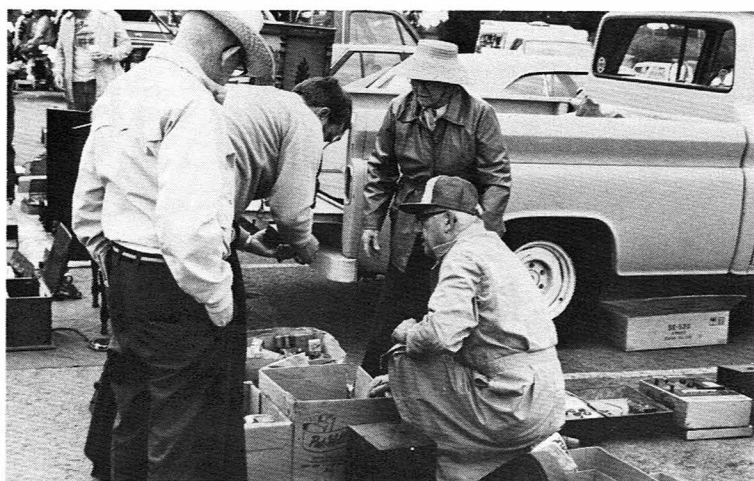
Ask your dealer to demonstrate the CHARMITONE LOUD SPEAKER for you. If he cannot supply you, we will send either model direct, prepaid, upon receipt of price.

**Dual Loud Speaker Co.**  
210 West 54th St. New York City



# june swap '85

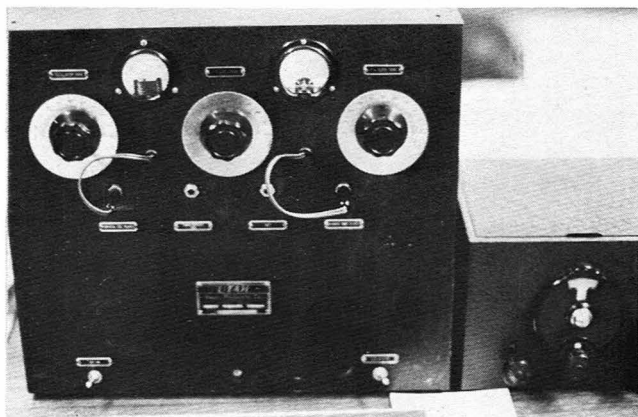






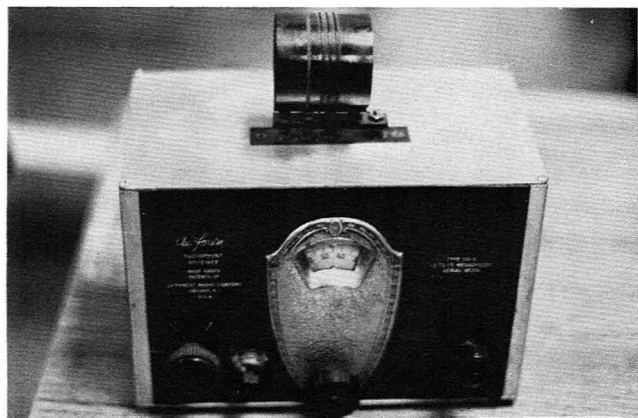
**Novelty:**

- 1st Dr. Pepper Cooler  
- Doug Ludwig
- 2nd Smokerette  
- Russ Turner



**Pre-1950 Ham:**

- 1st Utah Transmitter  
- Henery Meyer



**Regen:**

- 1st De Forrest Radio-  
phone  
- Will Jensby

**Speakers & Mikes:**

- 1st Double Button  
mike  
- Henery Meyer



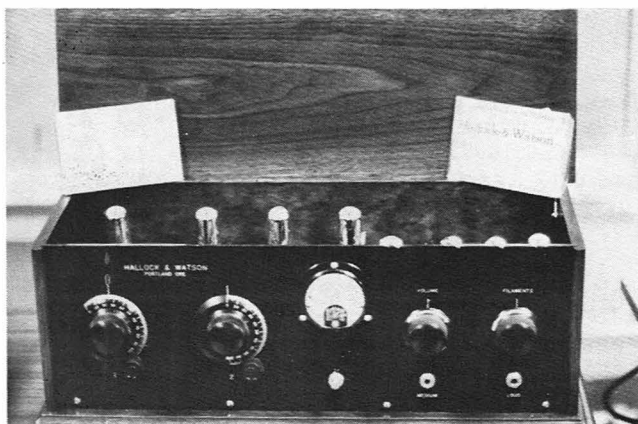
**Crystal:**

- 1st Radiola brand  
- Henery Rogers



**Superhet:**

- 1st Hallech and  
Watson  
- Don Steele





## our leaders

From left to right;

GARY HALVERSON, BOB MALIN, HERB BRAMS, NORM BERGE,

RUSS TURNER, BILL WAKEFIELD, BOB CROCKETT, DOUG MARTIN

---

# ATWATER KENT

LOUD SPEAKERS





## COLLECTOR ADS



**Wanted** Microphones before 1945. Parts of any kind. Need information on Remler mikes. Norm Berge, 969 Addison Ave., Palo Alto, CA, 94301. (415) 323-0101.

**For Sale** Drake 2C with matching Q-multiplier, \$120 obo. Also communications receivers by Collins, Hamnerlund, Hallicrafters, National and others. ARC and military gear at low prices. Doug Martin, 288 Clearpark Cir., San Jose, CA 95136. (408) 225-3785.

**For Sale** Scott All-Wave 12, AW 15, AW 23, Super Twelve, Sixteen and AW 12 Deluxe parts chassis. Lincoln DCSW33 Chassis, McMurdo-Silver parts chassis, Scott Imperial Tweeters & plug-in coils. Write or call for prices/condition. John Eckland, 969 Addison Ave., Palo Alto, CA, 94301. (415) 323-0101.

**Wanted** Construction of Induction Coils and Transformers by Secor. Same title but by Curtis. Wireless Telegraphy and High Frequency Electricity by Coursey and other books on wireless telegraphy and electricity.

**For Sale** Hard cover reprints of "High Frequency Apparatus" (1921) by H.L. Transtrom. Both 2nd editions, \$15.95 each, ppd. Tesla Coil Builders Association, RD3, Box 181, Glen Falls, NY 12801.

**For Sale** Battery radios. Send SASE for list. Ken Smith, 2321 Cal Young Rd, Eugene, OR 97401. (503) 485-0319.

**Wanted** Low freq coils and power supply for HRO. Parts and chassis for Stromber Carlsen model 641A.

**For Sale** Power supply for USN RAK/RAL National. SW-5, power supply and some coils. Ed Allison, 5525 20th Ave, Sacramento, CA 95820. (916) 454-1788.

**Wanted** Old tubes and Radio News Mags, pre-1925. State condition, issue, title, tube number, price. Special want: DeForest spherical audion with good fil(s) and a crystal set with fancy circuitry and panel. **For Sale** Old Edison records. Marc Gottlieb, 931 Olive St, Menlo Park, CA 94025.

**Wanted** Original or copy of manual including tube list for Supreme model 502 tube tester. Also will assist local collectors in repairing their early phonographs. Paul Bourbin, 25 Greenview Ct, San Francisco, CA 94131.

**For Sale** Radios, chassis, parts, tubes, test equip, Riders and Sams manuals, RCA service data, knobs. Write wants, SASE for list. F. Krantz, 100 Osage Ave, Somerdale, N.J. 08083.

**For Sale** Radiola IV, Kennedy X. Patterson PR-10, Patterson presel-ector, Hallicrafters SX-42. Radio News and QST mags plus others. Books, catalogs, manuals. **Wanted** Early to 1950's literature, ie books, catalogs, magazines, manuals, etc. Will purchase single items, lots or entire libraries. Bill Wakefield, 1753 Kimberly Dr, Sunnyvale, CA 94087. (408) 746-0873.

**For Sale** Grebe CR-9 \$250, Federal 59 \$500, 61 \$600, Marconiphone V2 \$1100, Kennedy 110 \$700, 220 \$400, 525 \$350. Paul Giganti, 2429 San Carlos Blvd, San Carlos, CA 94070. (415) 593-4723.

**Wanted** 1949 Coca-Cola radio, any condition, 1930 24" Coco-Cola bottle radio excellent - mint original condition. Ekkehart Willms, 137 West 40th Ave., San Mateo, CA 94403. (415) 349-4050.



**Wanted** Ham Spark Era components, QSL cards, Licenses, books, magazines and photos up to 1922; Homebrew transmitters of the 20's; Player Piano rolls.

**For Sale or Swap** Complete set of CQ magazines from 1st to Dec, 1975. Hallicrafters SX-28, RME-70, Crosley 51, RCA 8-TR-29 TV (1948). Gary Halverson, WA9MZU, 1751 Michon Dr., San Jose, CA 95124. (408) 266-2218.

**For Sale** Prime Time Radio Classics. Over 25,000 prime programs, cassettes or reel-to-reel. Don Och, 654 Chynoweth, San Jose, CA 95136.

**Antique Radio Classified** is the largest publication of its type catering to collectors. Published 12 times a year, subscribers get 1 free ad with each issue. Send S.A.S.E. for details. **ANTIQUÉ RADIO CLASSIFIED**, 9951 Sunrise Blvd., Suite R-9, Cleveland, Ohio 44133. (216) 582-3094.

**For Sale** 1925 Zenith English cabinet only, best offer. 1940 Magnavox radio/phono combo (Drexel cab.), ex. cond, \$75. Misc. wood/plastic table models, \$5 - \$25.

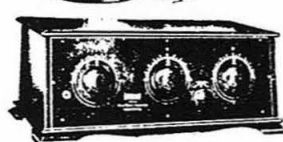
**Wanted** Chrome front radios - Majestic, Lyric, Stewart Warner. Bob Malin, 1825 Via El Capitan, San Jose, CA 95124. (408) 267-1396.



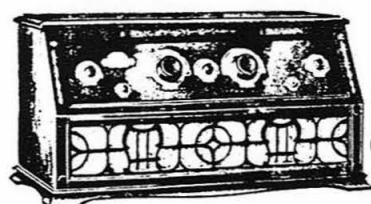
Music Master  
Reproduces Wood  
Instruments - Natural  
Tone Quality



Model FI, \$30  
14" Wood Bell  
Model FII, \$35  
21" Wood Bell



TYPE 60  
Five Tubes. Two stages of radio frequency, detector and two stages audio frequency. Selective, good volume and distance. Brown mahogany art. finish cabinet. Price . . . . . \$60



TYPE 175  
Six Tubes. Special Music Master Circuit. Very selective, long distance and splendid tone quality. Builtin Music Master Reproducer. Solid mahogany cabinet in brown mahogany art satin finish. Price . . . . . \$175

Ten Models - \$50 to \$400  
Guaranteed Unconditionally

## Radio, too, is now Standardized

PIONEER owners of automobiles had to try out larger magnetos, different carburetors, more accurate timers and what not else, to get some degree of motoring satisfaction!

Pioneer owners of radio receiving sets likewise experimented with different tubes, more powerful batteries, condensers and all sorts of "loud speakers," trying to balance the power of the set with the quality of the amplifier. And they found that, no matter how good their set might be, Music Master Reproducer made any good set better.

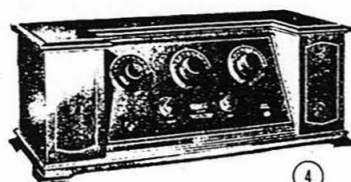
Music Master Receivers provide efficiency of radio reception equal to the quality of Music MASTER reproduction. Music MASTER makes no claim to have developed new and sensational radio "hook ups." Standardization is the accepted principle of New Era Radio, and Music Master Receivers embody the demonstrated principles of radio research and electrical science.

An authorized Music MASTER dealer will demonstrate—in your home if you wish—Music MASTER's power of distance, clarity and volume, ease of operation—and above all, its faithful reproduction and superb musical tone quality.

See MUSIC MASTER—hear—compare—before you buy ANY radio set.

**Music Master Corporation**  
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Five Tubes. New Music Master Circuit, involving special adaptation to radio frequency. Very selective, good volume and distance. Solid mahogany cabinet in brown mahogany art satin finish. Price . . . \$100

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AS ONE COMPACT UNIT and only 4 1/2" x 4 1/4" x 9 3/4".

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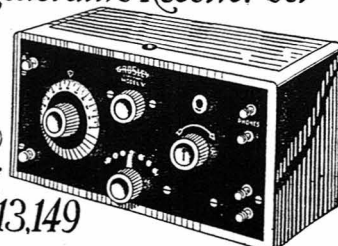
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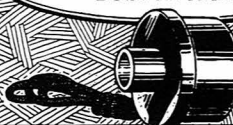


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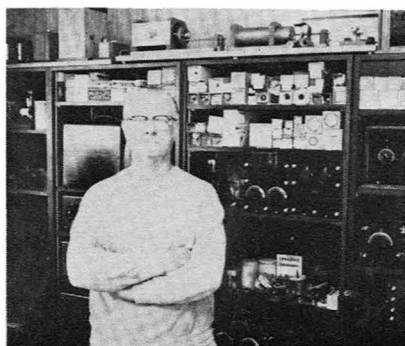
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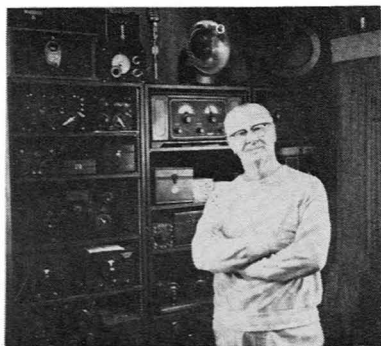


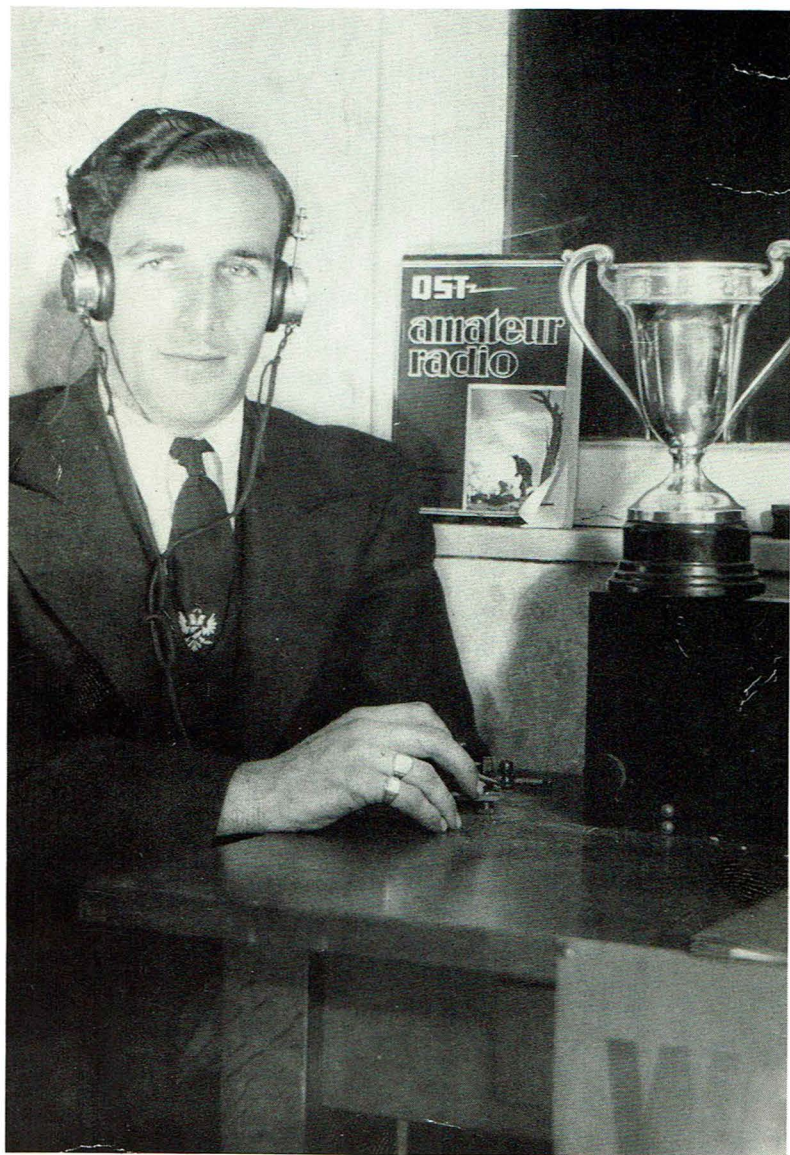
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